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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/634,155	08/04/2003	Hiroshi Ogawa	10746/36	6333

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EXAMINER
GELAGAY, SHEWAYE

ART UNIT	PAPER NUMBER
2137	

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11/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/634,155	OGAWA ET AL.
	Examiner	**Art Unit**	
	Shewaye Gelagay	2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>14 September 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-4,7-10,13-16 and 19-24</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-4, 7-10, 13-16 and 19-24</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>04 August 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This office action is in response to Applicant's amendment filed on September

14, 2007. Claims 1-4, 7-10, 13-16 and 19-24 are pending.

Response to Arguments

2.   Applicant's arguments filed September 14, 2007 have been fully considered but

they are not persuasive. In response to applicant's argument the following comments

are made:

The applicant argued that Cox does not identically disclose (nor suggest) the

claim feature of "obtaining a complexity of said block data; obtaining the amount of

transformation of said frequency coefficient from said complexity and transforming

coefficient by said amount; embedding said digital watermark data in said digital data

contents by transforming said frequency coefficient by said amount. Cox teaches

placing a watermark in any predetermined location that should belong to the

perceptually significant regions of the spectrum if the watermark is to survive common

signals transformations such as compression, scaling, etc. Each coefficient of the

watermarked spectrum is scaled by the local average of the power in the image spectral

coefficient rather than the coefficient itself. (col. 6, lines 41-46) In addition, Cox teaches

watermark may also be inserted after the MPEG quantization stage to reduce distortion

of the watermark inserting the watermark is performed after the data undergoes MPEG

quantization processing. (col. 9, lines 11-16; col. 11, lines 12-15) Cox teaches the data

to be watermarked is provided to another spectral transformer and the output (i.e.

complexity of data) is provided as inputs to a spectral sharper which modifies the

spectral properties of the pseudo-random noise codes from spectral transformer (i.e.

amount of transformation of frequency coefficient) to mask watermark when added to

the image data.(col. 4, lines 45-65) Cox further teaches a Discrete Cosine Transform

(DCT) of the image is then computed and the two dimensional DCT is vectorized in the

zigzag pattern, although other patterns are also possible. Next, a PN noise sequence is

inserted into the DCT coefficients using equation 1 as before. The length of the PN

sequence cannot exceed 64 and is typically much shorter. Within each row of blocks,

the PN sequence is cyclically rotated by one frequency coefficient prior to insertion in

the subsequent block. Similarly, the PN sequence is cyclically rotated by one frequency

coefficient at the start of each new row. The purpose of these rotations or shifts is to

improve the response of the watermark extraction stage. (col. 8, line 38-65)

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1, 3, 7, 9, 13, 15, 19, 21 and 23 rejected under 35 U.S.C. 102(e) as being

anticipated by Cox et al. (hereinafter Cox) US Patent Number 5,915,027.

As per claims 1, 7, 13 and 19:

Cox teaches a method for embedding digital watermark data in digital data

contents, said method comprising the steps of:

receiving said digital data contents and said digital watermark data; (col. 8, lines

36-39)

dividing said digital data contents into block data; (col. 8, lines 36-39)

obtaining a frequency coefficient of said block data; (col. 8, lines 40-54)

obtaining a complexity of said block data; (col. 8, lines 40-54)

obtaining an amount of transformation of said frequency coefficient from said

complexity and said digital watermark data by using a quantization width; (col. 8, lines

40-54; col. 10, lines 13-44)

embedding said digital watermark data in said digital data contents by

transforming said frequency coefficient by said amount; (col. 6, lines 24-38; col. 8, lines

40-54; col. 10, lines 13-44) and

generating watermarked digital data contents. (col. 6, lines 24-38; col. 8, lines 40-

54; col. 10, lines 13-44)

As per claims 3, 9, 15, 21 and 23:

Cox teaches a method for embedding digital watermark data in digital data

contents, said method comprising the steps of:

receiving said digital data contents and said digital watermark data; (col. 8, lines

36-39)

dividing said digital data contents into block data; (col. 8, lines 36-39)

obtaining a frequency coefficient of said block data; (col. 8, lines 40-54)obtaining

a complexity of said block data; (col. 8, lines 40-54)

obtaining an amount of transformation of said frequency coefficient from said

digital watermark data by using a quantization width corresponding to said frequency

coefficient, said quantization width being obtained beforehand according to a

manipulation method of said digital data contents; (col. 5, lines 47-58; col. 6, lines 3-49)

embedding said digital watermark data in said digital data contents by

transforming said frequency coefficient by said amount; (col. 2, lines 51-55; col. 6, lines

3-49) and

generating watermarked digital data contents. (col. 2, lines 51-55; col. 6, lines 3-

49)

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 2, 4, 8, 10, 14, 16, 20, 22 and 24 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Cox et al. (hereinafter Cox) US Patent Number 5,915,027 in

view of Ho et al. (hereinafter Ho) US Patent Number 6,983,057.

As per claims 2, 8, 14 and 20:

Cox teaches all the subject matter as discussed above. In addition, Cox further discloses a method said step of obtaining said complexity of said block data comprising the steps of: transforming said block data, by applying a wavelet transform, into coefficients of said wavelet transform, and (col. 4, lines 39-65) obtaining said complexity on the basis of the number of high frequency coefficients in said coefficients of said wavelet transform, (col. 4, lines 39-65; col. 9, lines 1-16) Cox does not explicitly disclose each of said high frequency coefficients exceeding a threshold. Ho in analogous art, however, discloses each of said high frequency coefficients exceeding a threshold. (col. 5, lines 38-43) Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the method disclosed by Cox with Ho in order to embed watermark in the high frequency region. (col. 5, line 43; Ho)

As per claims 4, 10, 16, 22 and 24:

Cox teaches all the subject matter as discussed above. In addition, Cox further discloses a method wherein said quantization width is obtained by a method comprising the steps of: dividing first digital data contents into one or a plurality of first block data; (col. 4, lines 38-65; col. 8, lines 36-39) dividing second digital data contents into one or a plurality of second block data, said second digital data contents being obtained by manipulating said first digital data contents with a predetermined manipulation method; (col. 4, lines 38-65; col. 8, lines 36-39) transforming said first block data and said second block data into first frequency coefficients and second frequency coefficients respectively by applying an orthogonal transform; (col. 4, lines 38-65; col. 8, lines 36-39) Cox does not explicitly disclose obtaining difference values between said first frequency

coefficients and said second frequency coefficients for each frequency coefficient;

calculating a standard deviation of distribution of said difference values; and obtaining

said quantization width by multiplying said standard deviation by a watermark

embedding strength. Ho in analogous art, however, discloses obtaining difference

values between said first frequency coefficients and said second frequency coefficients

for each frequency coefficient; calculating a standard deviation of distribution of said

difference values; and obtaining said quantization width by multiplying said standard

deviation by a watermark embedding strength. (col. 7, line 45-col. 8, line 49) Therefore,

it would have been obvious to one ordinary skill in the art at the time the invention was

made to modify the method disclosed by Cox with Ho in order to perform different

statistical analysis of frequency coefficients to determine optimum off-set positions. (col.

8, lines 2-3; Ho)

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

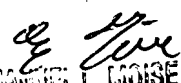extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shewaye Gelagay whose telephone number is 571-272-4219. The examiner can normally be reached on 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on 571-272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Shewaye Gelagay

EMMANUEL L. MOISE
SUPERVISORY PATENT EXAMINER